

*Working to Save
Our Coastal Wetlands*



**Coastal Restoration Division
Annual Project Reviews**

December 2001



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STATE OF LOUISIANA

M. J. "Mike" Foster, Jr., Governor

DEPARTMENT OF NATURAL RESOURCES

Jack C. Caldwell, Secretary

OFFICE OF COASTAL RESTORATION AND MANAGEMENT

James "Randy" Hanchey, Assistant Secretary

COASTAL RESTORATION DIVISION

Bill Good, Ph.D., Administrator

A report of:

Louisiana Department of Natural Resources
Coastal Restoration Division
Restoration Technology Section

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The purpose of this document is to provide the public with easily accessible information about projects constructed to date and the current efforts to address Louisiana's coastal land loss problem. The information contained in this report is current through November 2001. For more detailed information on these projects, or other relevant efforts, please refer to:

Coast 2050: Toward a Sustainable Coastal Louisiana
Louisiana Coastal Wetlands Conservation Plan
1999 Status Report for Coastal Wetlands Conservation and Restoration Program
The 1997 Evaluation Report to the U.S. Congress on the Effectiveness of Louisiana Coastal Wetland Restoration Projects

For more information on projects:

visit our website at www.saveLAwetlands.org, call 1-888-459-6107, or write to the Department of Natural Resources, Coastal Restoration Division, PO Box 44027, Capitol Station, Baton Rouge, Louisiana 70804-4027.

TABLE OF CONTENTS

List of Figures.	ii
List of Tables.	ii
Abbreviations.	iii
An Introduction to Coastal Restoration in Louisiana.	1
Region 1.	4
Introduction.	4
Project Information.	5
Region 2.	17
Introduction.	17
Project Information.	18
Region 3.	39
Introduction.	39
Project Information.	40
Region 4.	64
Introduction.	64
Project Information.	65
Coastwide Restoration Projects and Programs.	86
Inactive State Projects.	87
Conclusions.	89

LIST OF FIGURES

1.	Coastal Louisiana land loss by basin from 1978 to 1990.	1
2.	Wetland loss rates of the entire Louisiana coastal area expressed in square miles per year	2
3.	Coast 2050 Region 1 ecosystem strategies..	7
4.	Location of Breaux Act projects authorized in Coast 2050 Region 1.	8
5.	Location of PCWRP, State, Section 204 and 1135, and Vegetation projects in Coast 2050 Region 1.	9
6.	Coast 2050 Region 2 ecosystem strategies.	21
7.	Location of Breaux Act projects authorized in Coast 2050 Region 2.	22
8.	Location of PCWRP, State, Section 204 and 1135, Vegetation, Dedicated Dredging, and Federal projects in Coast 2050 Region 2.	23
9.	Coast 2050 Region 3 ecosystem strategies.	43
10.	Location of Breaux Act projects authorized in Coast 2050 Region 3.	44
11.	Location of PCWRP, State, Section 204 and 1135, Vegetation, Dedicated Dredging, and FEMA projects in Coast 2050 Region 3.	45
12.	Coast 2050 Region 4 ecosystem strategies.	68
13.	Location of Breaux Act projects authorized in Coast 2050 Region 4.	69
14.	Location of PCWRP, State, Section 204 and 1135, and Vegetation projects in Coast 2050 Region 4.	70

LIST OF TABLES

1.	Restoration projects completed or pending in Coast 2050 Region 1.	10
2.	Restoration projects completed or pending in Coast 2050 Region 2.	24
3.	Restoration projects completed or pending in Coast 2050 Region 3.	46
4.	Restoration projects completed or pending in Coast 2050 Region 4.	71
5.	Coastwide restoration projects and programs	86
6.	Inactive state projects.	87

ABBREVIATIONS

Breaux Act Task Force	Louisiana Coastal Wetlands Conservation and Restoration Task Force
CRD	Coastal Restoration Division
CWPPRA	Coastal Wetlands Planning, Protection and Restoration Act
DNR	Department of Natural Resources
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Administration
GIS	Geographic Information System
GIWW	Gulf Intracoastal Waterway
LDNR	Louisiana Department of Natural Resources
LSU	Louisiana State University
MRGO	Mississippi River Gulf Outlet
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NWRC	National Wetlands Research Center
PCWRP	Parish Coastal Wetlands Restoration Program
PPL	Priority Project List
SWCC	Soil and Water Conservation Committee
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WRDA	Water Resources Development Act

AN INTRODUCTION TO COASTAL RESTORATION IN LOUISIANA

OVERVIEW

Louisiana currently experiences 80% of the United States' coastal wetland loss at an average rate of 25 to 35 square miles per year (Figures 1 and 2). At this rate, an area the size of a football field is lost every 30 to 45 minutes. The causes of wetland loss are complex and vary across the state. They can be attributed to both natural processes (e.g., subsidence and storm events) and human activities (e.g., levee and canal construction). Wetlands that are now becoming open water not only provide recreation such as sport fishing and hunting, photography, bird watching, and nature studies, but also ecological services such as hurricane protection, water quality improvement, flood peak reduction, and resource production. If this trend of wetland loss continues, it is estimated that it could cost the Nation \$36.6 billion from lost public use value over the next 50 years.



Figure 1. Coastal Louisiana land loss (square miles / year) by basin from 1978 to 1990 (Barras et al. 1994¹).

The state of Louisiana has initiated a series of programs to offset the catastrophic loss of coastal wetlands. The Louisiana State and Local Coastal Resources Management Act

was passed in 1978 to regulate the developmental activities which affect wetland loss. The resulting Louisiana Coastal Resources Program became a federally approved coastal zone management program in 1980. Responding to the crisis at hand, the Louisiana Legislature passed Act 6 of the second extraordinary session of 1989 (R.S. 49:213-214), and a subsequent constitutional amendment which created the Coastal Restoration Division (CRD) within the Louisiana Department of Natural Resources (LDNR), as well as the Wetlands Conservation and Restoration Authority (Wetlands Authority). Act 6 also established the Wetland Trust Fund, which provides revenues derived from oil and gas activities to wetland restoration efforts in Louisiana.

BREAUX ACT

In 1990, the United States Congress recognized the national significance of wetland loss in Louisiana and passed the Coastal Wetlands Planning, Protection, and Restoration Act (hereafter, the "Breux Act"; Public Law 101-646, Title III) to contribute federal monies to state restoration activities. Since passage, the Breux Act has dedicated approximately \$40 million annually to wetland restoration projects in Louisiana. The Breux Act also created a partnership between Louisiana and five federal agencies: the United States Departments of Army; Agriculture, Commerce, and Interior; and the United States Environmental Protection Agency.

Since 1991, the state of Louisiana and its cooperating federal partners have been formally selecting restoration projects on an annual basis for implementation. The CRD's

¹Barras, J.A., P.E. Bourgeois, and L.R. Handley. 1994. Land loss in coastal Louisiana 1956-1990. National Biological Survey, National Wetlands Research Center Open File Report 94-01.

Restoration Technology Section and Biological Monitoring Section cooperate with federal, state, and local agencies to monitor and evaluate all restoration projects prior to, and following project construction. Project monitoring provides an unbiased, scientific approach to assessing the effectiveness of each project. The types of monitoring activities vary, depending on the type of project and its specific goals and strategies. Breaux Act projects are typically monitored over the 20-year project life.

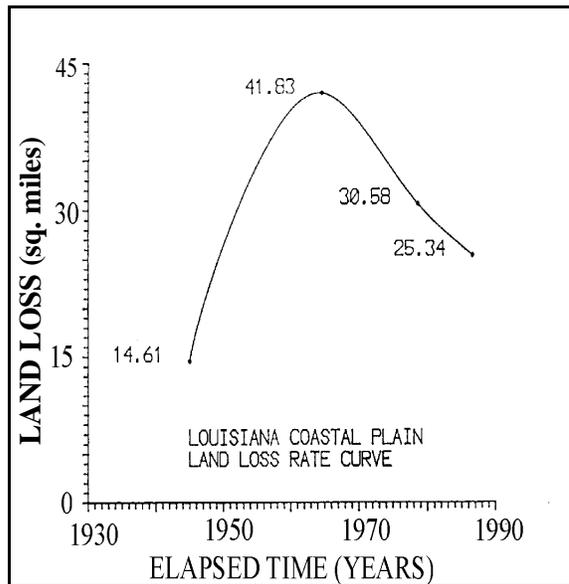


Figure 2. Wetland loss rates of the entire Louisiana coastal area expressed in square miles per year (Dunbar et al. 1992²).

OTHER RESTORATION PROGRAMS

Several other wetland restoration programs were created, each utilizing a specific strategy to combat coastal wetland loss. These programs include: the Parish Coastal Wetlands Restoration Program (PCWRP); the LDNR/Natural Resources Conservation Service (NRCS)/Soil and Water Conservation Committee (SWCC) Vegetation Planting Program; and the beneficial use of dredged material programs governed by

Sections 204 and 1135 of the Water Resources Development Act (WRDA).

The PCWRP, also known as the “Christmas Tree Program,” is designed to encourage public involvement and participation in coastal restoration. Wooden enclosures are filled with recycled Christmas trees that have been donated by the public. These structures are built in close proximity to the shoreline and absorb wave energy, protecting existing marsh or vegetation. Sediment is deposited behind these structures and promotes subsequent colonization and growth of new marsh vegetation. Christmas tree fences are relatively inexpensive, with an average cost of \$50 per linear foot.

Through WRDA, the United States Congress authorized the United States Army Corps of Engineers (USACE) to construct large-scale freshwater diversion projects along the Mississippi River. These river diversions have the potential to benefit vast areas of deteriorating marsh by introducing beneficial freshwater, sediment, and nutrients. It is anticipated that the Caernarvon and Davis Pond Freshwater Diversions near New Orleans will benefit over 40,000 acres of wetland habitat.

COAST 2050

In 1997 a significant planning effort called “Coast 2050” was initiated to combine all elements of Louisiana’s previous coastal restoration efforts, as well as new initiatives. This new approach included input from private citizens, local governments, state and federal agency personnel, and the academic community. This comprehensive plan focused all efforts of the participating agencies on the common goal of restoring and protecting the coastal ecosystem in Louisiana. In order to reestablish a sustainable, highly productive ecosystem, Coast 2050 identified the following three strategic goals as the essential natural processes required:

²Dunbar, J.B., L.D. Britch, and E.B. Kemp, III. 1992. Land loss rates: report 3, Louisiana coastal plane. Technical Report GL-90-2, U.S. Army Corps of Engineers District, New Orleans, La. 28 pp.

- Goal 1: Assure vertical accumulation to achieve sustainability;
- Goal 2: Maintain estuarine gradient to achieve diversity; and
- Goal 3: Maintain exchange and interface to achieve system linkages.

The Louisiana Coastal Wetlands Conservation and Restoration Task Force (Breux Act Task Force) and the State Wetlands Authority adopted the Coast 2050 effort as their official restoration plan. It has also garnered the support of the 20 parish councils and police juries within the Louisiana coastal zone.

RECENT PROGRAM DEVELOPMENTS

Beginning in 1999, the Breux Act Task Force implemented a “cash flow management” approach to ensure a higher standard of project development and evaluation prior to committing construction dollars. Following project selection, during the initial planning phase, the conceptualized project proceeds through a two phased process that provides for more efficient fund allocation. Phase I, referred to as “Engineering and Design,” is an in-depth process by which engineers and biologists further develop and assess the benefits of the proposed project. Phase II, referred to as “Construction and Monitoring,” involves the actual building and subsequent monitoring of the project.

In 2000, to compliment the new cash flow-management approach, LDNR initiated the Ecological Review process whereby each project’s biotic benefits, engineering features, goals, and strategies are evaluated during Phase I. This evaluation utilizes monitoring and engineering information, as well as applicable scientific literature to assess whether or not, and to what degree, the proposed project features will cause the desired ecological response. The Ecological Review is intended to improve the likelihood of successfully achieving each project’s intended purpose, thereby benefitting restoration efforts coastwide. Projects may or

may not proceed from Phase I to Phase II depending upon the findings of the Ecological Review.

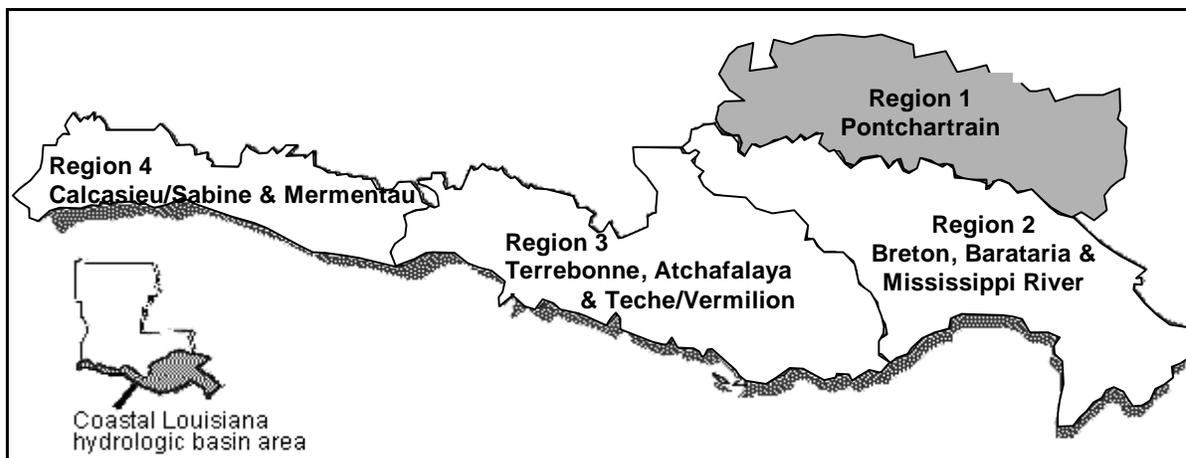
In response to the large amount of data and information generated as part of the coastal restoration program, CRD recently developed a GIS (Geographic Information System) -integrated web page located at www.saveLAwetlands.org. Available since the beginning of 2001, the new system provides any interested users (i.e. government agencies, researchers, and the general public) with access to the central repository for information on approximately 386 restoration projects and data from over 2,400 monitoring stations located throughout the Louisiana coast. Users are able to search for historical project data and reports, recent hourly and monthly data collections, as well as data transmitted real-time from automated data collection platforms. This innovative approach to environmental data and information dissemination will elevate public awareness and advance the science behind coastal restoration.

SYNOPSIS

The LDNR, its partners on the Breux Act Task Force, and the State Wetlands Authority have implemented projects throughout coastal Louisiana that have already been successful at restoring, protecting, and enhancing coastal wetlands. These projects are reducing coastal erosion, improving habitat conditions for coastal fisheries and wildlife species, and building new wetlands.

This report provides information about all coastal restoration projects that have been completed or are in the planning stages in the four Coast 2050 regions to date. It includes results from monitoring data, as well as a compilation of information from all federal and state agencies involved in coastal restoration in Louisiana.

REGION 1



INTRODUCTION

Region 1 encompasses the Lake Pontchartrain Basin, extending from the Mississippi River Gulf Outlet (MRGO) on the south to the Prairie Terrace on the north, and from the Chandeleur Islands on the east to Lake Maurepas on the west. This region covers all or part of the following parishes: Livingston; Tangipahoa; St. Tammany; St. Bernard; Orleans; Jefferson; St. Charles; St. John the Baptist; St. James; and Ascension.

Region 1 contains 576,570 acres of coastal wetlands consisting of approximately 110,000 acres of bottomland hardwood forest, 213,570 acres of swamp, 34,700 acres of freshwater marshes, 27,700 acres of intermediate marshes, 110,900 acres of brackish marshes, and 79,700 acres of saline marshes.

Estimates of wetland loss from Region 1 indicate that between 1932 and 1990, a total of 74,800 acres of wetlands have been lost (an average of 1,290 acres per year). Lakes Pontchartrain, Maurepas, and Borgne are the dominant hydrologic features within this region. Predominantly all of the Amite, Lake Maurepas, and Tickfaw watersheds (a combined area of 3,255 square miles) drain into Lake Maurepas. Lake Pontchartrain, connected to Lake Maurepas by Pass Manchac and North Pass, also receives freshwater inflows from the Tangipahoa and Liberty

Bayou-Tchefuncte watersheds (a combined area of 1,471 square miles), as well as the Bonnet Carrè Spillway. Major navigation channels within the region are the MRGO and the Gulf Intracoastal Waterway (GIWW).

Considerable wetland loss began in Region 1 after the construction of the MRGO in the early 1960s, with marsh loss occurring directly through channel dredging, and indirectly through saltwater intrusion. Effects of increased salinities were seen as far away as the Pontchartrain/Maurepas Land Bridge. Marshes east of New Orleans and adjacent to the MRGO were severely impacted by levee-induced ponding of water. Other major causes of land loss within this region include shoreline erosion, subsidence, and altered hydrology.

The most critical concerns from parish governments and the public are preserving the present habitats and current levels of productivity. Near the Manchac and North Shore areas and around the Pearl River mouth, conversion of some intermediate and brackish marshes to fresh marshes is needed. Open water in the interior of the forested wetlands near Lake Maurepas is also recommended for conversion back to forested wetland. Forested wetlands located immediately southwest of the MRGO in the Central Wetlands are denoted for expansion. Some of the saline Biloxi

Marshes are recommended for conversion to brackish marshes.

Coast 2050 identified specific ecosystem strategies for protecting and sustaining the region's coastal resources (Figure 3). These specific ecosystem strategies can be grouped into one of the

following five general categories: restoring swamps; restoring and sustaining marshes; protecting the integrity of the shorelines; restoring and maintaining the Chandeleur Islands; and maintaining and restoring critical landforms.

PROJECT INFORMATION

A total of 47 restoration projects have been authorized in Region 1 (Table 1). Project specific information is presented below organized by project funding source.

BREAUX ACT

A total of 16 projects have been authorized under the direction of the Breaux Act in Region 1, which are anticipated to benefit 6,427 acres of wetlands at a cost of \$22,218,483. The only project constructed in Region 1 under the Breaux Act this year was Fritchie Marsh (PO-06).

Five projects in Region 1 address imminent marsh loss due to changes in natural hydrology. The constructed projects are Fritchie Marsh (PO-06) and Bayou Sauvage Hydrologic Restoration projects (PO-16 and PO-18), and the projects that are authorized for construction are Hopedale Hydrologic Restoration (PO-24) and Bayou Bienvenue Pump Station Diversion (PO-25). These projects will restore hydrology to a more natural state and contribute to the protection

of the land bridge between Lakes Pontchartrain and Borgne.

One dedicated dredging project exists within Region 1, Bayou LaBranche Wetland (PO-17). This project involved filling an open-water area with dredged material from Lake Pontchartrain. Monitoring data indicate that the area was converted from 18.5% land/81.5% open water in 1993 to 81.7% land/18.3% open water in 1997. Approximately 51% of the area is now emergent marshes and 31% is scrub/shrub.

The MRGO Back Dike Marsh Protection (PO-19) project involves hydrologic modifications with the intent of preserving fresh marshes that are considered valuable for waterfowl. This marsh management project will also prevent bank erosion along the MRGO.

Two projects within Region 1, LaBranche Terracing/Planting (PO-28) project and the Bayou Chevee (PO-22) project, are designed to protect the shoreline of Lake Pontchartrain. Both involve building rock dikes to protect the shoreline, and create favorable conditions for submerged aquatic vegetation growth.

The Shore Protection and Marsh Creation in Lake Borgne at Shell Beach (PO-30) project is authorized for future construction. The project will maintain the integrity of the marshes that separates Lake Borgne from the MRGO.

The Chandeleur Islands Restoration (PO-27) project combines the use of vegetation along with other successful barrier island restoration techniques at 22 selected sites. The project will aid in the recovery of



Monitoring of a sediment erosion table at the Fritchie Marsh Restoration (PO-06) project.

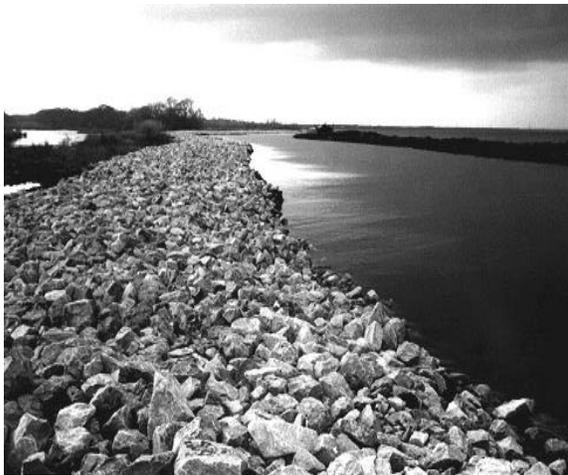
the Chandeleur Islands from damage sustained during Hurricane Georges in 1998. Two water diversion projects are authorized within Region 1, Opportunistic Use of Bonnet Carré Spillway (PO-26), and Diversion into Maurepas Swamp (PO-29). These projects will divert water from the Mississippi River to wetlands surrounding lakes Pontchartrain and Maurepas, creating more favorable conditions for the vegetation in that area.

The Breaux Act Task Force officially deauthorized the following three projects in Region 1: Violet Freshwater Distribution (PO-09a); Red Mud Demonstration (PO-20); and Eden Isles East Marsh Creation (PO-21).

STATE

Six projects, which were implemented in Region 1 by the CRD and funded by the Wetlands Trust Fund, are currently estimated to benefit 2,443 acres of land at a cost of \$3,658,435.

Two freshwater diversion projects, Violet Siphon (PO-01) and Central Wetlands (PO-08), address increased salinity and reduced sediment and nutrient availability in deteriorating marshes. By restoring the input of freshwater, salinity is decreased and the project area is nourished with the fine sediment and nutrients from the Mississippi River.



Shoreline protection between Lake Pontchartrain and LaBranche wetlands (PO-3b).

Four shoreline protection projects [Bayou Chevee (PO-02c), LaBranche

Shoreline (PO-03 and PO-03b), and Turtle Cove (PO-10)] address erosion along critical areas of the Lake Pontchartrain shoreline. Post construction monitoring data from Turtle Cove from October 1994 to December 1996 indicate that the shoreline in the project area prograded an average of 23.4 feet, creating more than 5 acres of wetlands.

PARISH COASTAL WETLANDS RESTORATION PROGRAM

The following six Christmas tree projects have been constructed within Region 1: Blind Lagoon; Crab Pond; Goose Point; LaBranche; The Prairie; and Bayou Bienvenue.

Elevation surveys at the LaBranche site revealed the accumulation of approximately 0.35 feet of sediment during the first two years the creation of 3 acres of wetlands. These results clearly demonstrate the effectiveness of this technique. Since 1990, approximately 6,044 linear feet of fences have been constructed in Region 1.

DNR/NRCS/SWCC VEGETATION PLANTING PROGRAM

Since 1988, a total of 13 vegetation planting projects have been implemented within Region 1. These projects involved planting approximately 56,300 plants (72% smooth cordgrass, *Spartina alterniflora*) along more than 177,500 linear feet of shoreline/bankline. Several phases exist for many of the planting projects, which span over several years. The 2001 vegetation planting projects for Region 1 are Bayou LaBranche, Saveiro Canal, and Lake Maurepas.

SECTION 204/1135

Within Region 1, three Section 204 projects were constructed in 1999 along the MRGO between Mile -3 and Mile 14. These projects utilized dredged material from routine maintenance of the MRGO to create approximately 76 acres of wetlands.

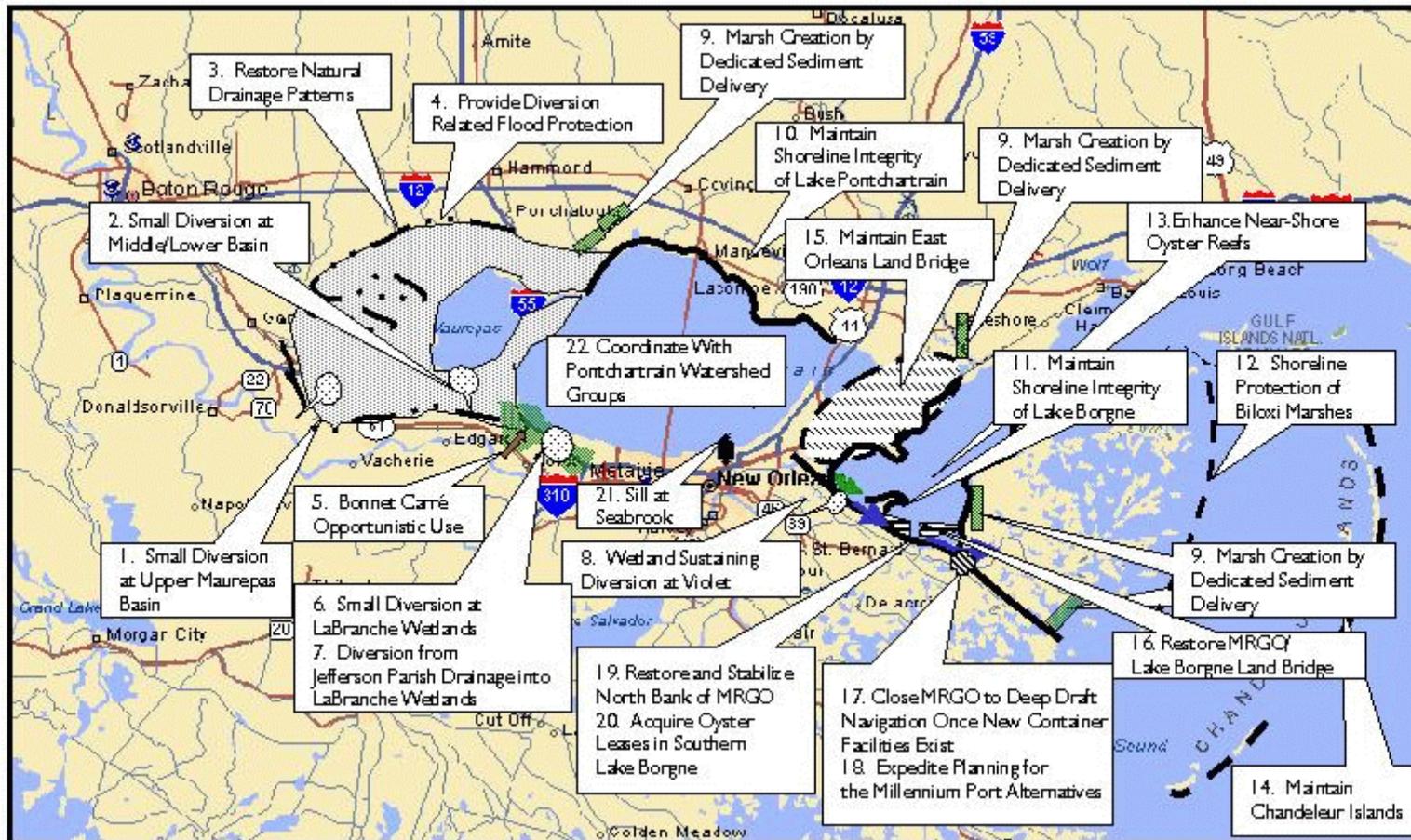


Figure 3. Coast 2050 Region 1 ecosystem strategies.

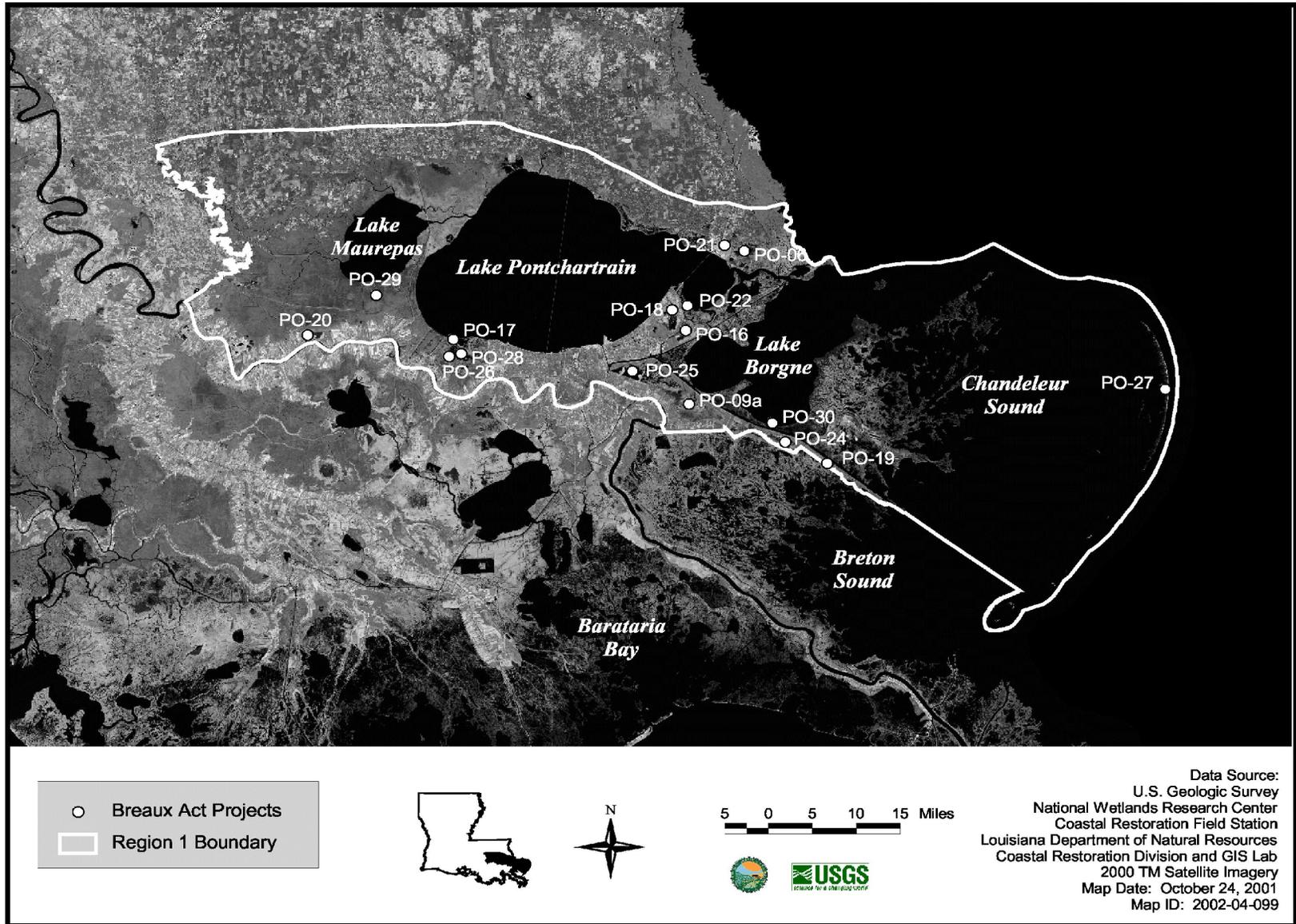


Figure 4. Location of Breux Act projects authorized in Coast 2050 Region 1.

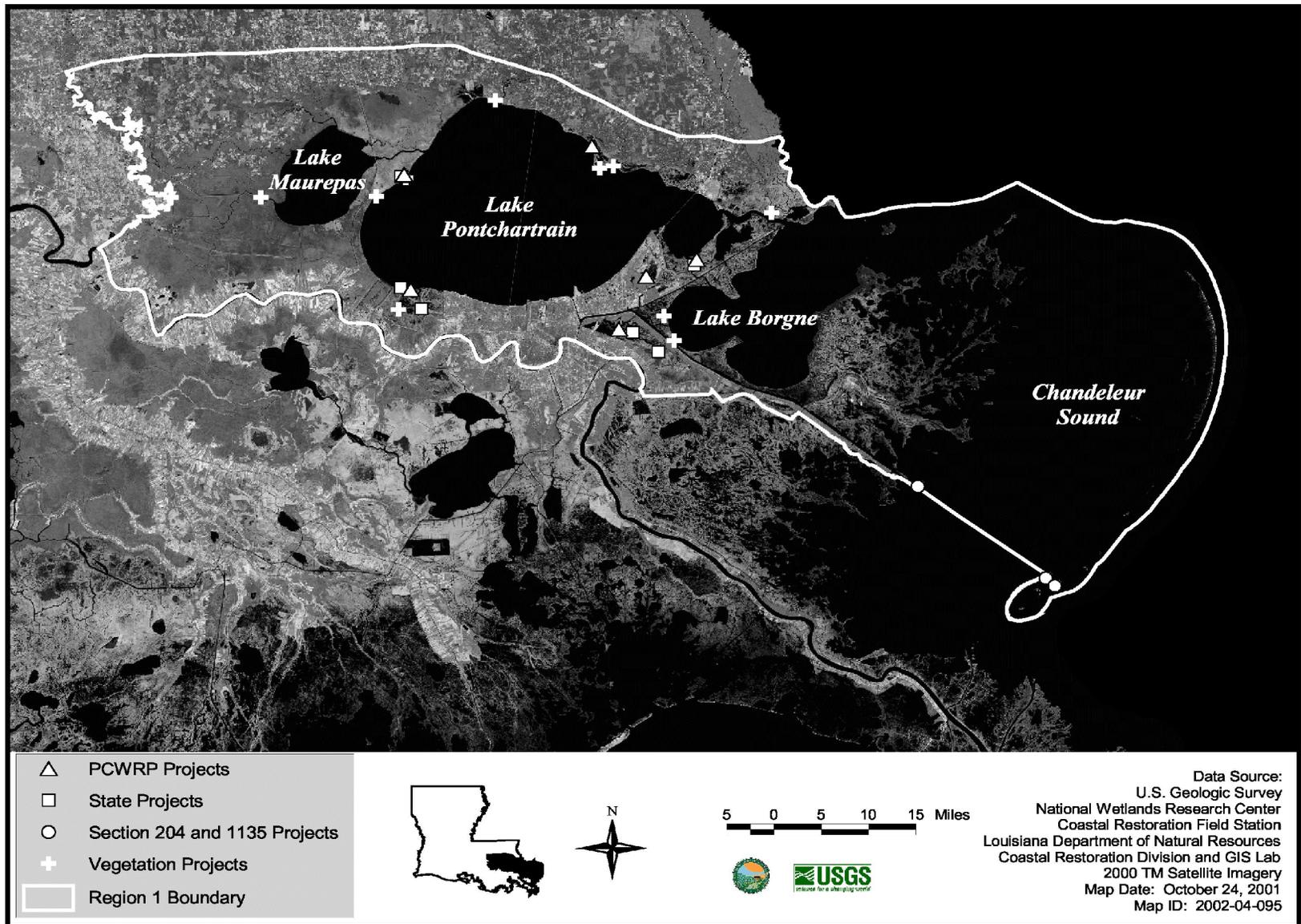


Figure 5. Location of PCWRP, State, Section 204 and 1135, and Vegetation projects in Coast 2050 Region 1.

Table 1. Restoration projects completed or pending in Coast 2050 Region 1.

Program	Project Number State/Federal	Project Name	Project Type	PPL	Agency/ Sponsor	Senator/Representative	Parish	Anticipated Acres Benefitted	Activities			Original Baseline Cost (top) and Current Cost Estimate (bottom)
									Engineering, Design, and Landrights	Construction	Operation, Maintenance, and Monitoring	
Breaux Act	PO-06 (PO-06)	Fritchie Marsh Restoration	HR	2	NRCS	Sen. John T. Schedler Rep. A. G. Crowe	St. Tammany	1,040	C	2001	I	\$3,048,389
		This project was authorized to address imminent marsh loss caused by alterations in the natural hydrology. The implementation of this project will restore a more natural hydrologic regime to a wetland near Slidell, LA by facilitating the input of freshwater into the wetlands.										
	PO-09a (PO-09a)	Violet Freshwater Distribution	HR	3	NRCS	Sen. Lynn B. Dean Rep. Kenneth L. Odinet, Sr.	St. Bernard	N/A		Deauthorized		\$1,821,438
		This project was authorized to manage the distribution of freshwater from the existing state-funded Violet Siphon (PO-01) project. The implementation of this project would conserve and enhance vegetated wetlands by distributing freshwater from the Mississippi River and municipal stormwater pumping stations into adjacent wetlands. Based on findings from pre-construction geotechnical investigations, the required design revisions made this project economically unjustifiable. This project was officially deauthorized by the Breaux Act Task Force in October of 2001.										
	PO-16 (XPO-52A)	Bayou Sauvage Refuge Protection (Phase I)	HR	1	USFWS	Sen. Jon D. Johnson Rep. Kenneth L. Odinet, Sr.	Orleans	1,050	C	1996	I	\$1,657,708
		This project utilizes pumps to remove excess water from the project area, to promote the growth of fresh marsh vegetation, and protect black willow (<i>Salicix nigra</i>) stands. Construction was completed in May 1996 and biological monitoring has been initiated.										
	PO-17 (PPO-10)	Bayou LaBranche Wetland	DM	1	USACE	Sen. Joel T. Chaisson II Rep. Gary L. Smith	St. Charles	356	C	1994	I	\$4,461,301
		This project utilized dredged material from Lake Pontchartrain to replace lost wetlands by directly creating a 70:30 land/water wetland area in shallow open water near New Orleans, LA. Construction was completed in April 1994 and biological monitoring has been initiated.										
	PO-18 (XPO-52B)	Bayou Sauvage Refuge Protection (Phase II)	HR	2	USFWS	Sen. Jon D. Johnson Rep. Kenneth L. Odinet, Sr.	Orleans	1,280	C	1997	I	\$1,452,035
		This project utilizes pumps to remove excess water from the project area and to promote the growth of fresh marsh vegetation. Construction was completed in June 1997 and biological monitoring has been initiated.										
	PO-19 (XPO-71)	MRGO Back Dike Marsh Protection	MM	3	USACE	Sen. Lynn B. Dean Rep. Ernest D. Wooton	St. Bernard	755	C	1999	N/A	\$512,198
		This project was authorized to address loss of fresh marsh on the Mississippi River Gulf Outlet (MRGO) disposal area. The project was reduced in scope from its original design to repair a shorter reach of earthen dikes and was completed by the USACE in January of 1999.										

(continued)

Program	Project Number State/Federal	Project Name	Project Type	PPL	Agency/ Sponsor	Senator/Representative	Parish	Anticipated Acres Benefitted	Activities			Original Baseline Cost (top) and Current Cost Estimate (bottom)
									Engineering, Design, and Landrights	Construction	Operation, Maintenance, and Monitoring	
Breaux Act (continued)	PO-20 (XTE-43)	Red Mud Demonstration	MC	3	EPA	Sen. Louis J. Lambert, Jr. Rep. Robert Fauchaux, Jr.	St. James	N/A	C	Deauthorized		\$350,000
									\$26,836	\$321,499	\$122,165	\$470,500
	This project was authorized to determine whether red mud, produced as a by-product of removing alumina from bauxite, could be utilized as marsh-creation material in combination with compost and marsh sediment. Construction of the experimental units was completed in 1997; however, due to unexpected problems with fill material, liners, and contaminants in the water source, the project was officially deauthorized by the Breaux Act Task Force in August 2001.											
	PO-21 (PPO-4)	Eden Isles East Marsh Creation	HR	4	NMFS	Sen. John T. Schedler Rep. Matthew P. Schneider, III	St. Tammany	N/A		Deauthorized		\$5,018,968
									\$35,973	\$0	\$2,947	\$38,920
	There was a change in landowners of the project area during the planning phase of this project. The new landowner chose not to participate in the restoration program. Consequently, the project was officially deauthorized by the Breaux Act Task Force in January 1998.											
	PO-22 (XPO-69)	Bayou Chevee Shoreline Protection	SP	5	USACE	Sen. Jon D. Johnson Rep. Kenneth L. Odinet, Sr.	Orleans	75	C	2001	I	\$2,555,029
									\$430,099	\$1,444,000	\$380,871	\$2,257,970
	The scope of this project has been modified from a Beneficial Use of Dredge Material project. The revised project will utilize two sections of rock dikes to protect this currently exposed wetland area from erosive wave energy from Lake Pontchartrain, and enhance the establishment of submergent aquatic vegetation in the ponds behind the rock dikes.											
	PO-24 (PPO-38)	Hopedale Hydrologic Restoration	HR	8	NMFS	Sen. Lynn B. Dean Rep. Kenneth L. Odinet, Sr.	St. Bernard	134	I	2002*	I	\$2,179,491
\$334,828									\$998,158	\$1,090,261	\$2,423,247	
This project will abate site-specific wetland loss by replacing collapsed culverts installed in the 1950s near Yscloskey, LA. These degraded water control structures are currently preventing the drainage of high tides and stormwater runoff, resulting in impounded water on the marsh.												
PO-25 (XPO-74a)	Bayou Bienvenue Pump Station Diversion	HR/MC	8	NMFS	Sen. Lynn B. Dean Rep. Kenneth L. Odinet, Sr.	Orleans/ St. Bernard	442	I	No Date	NI	\$3,295,574	
								\$757,476	\$2,298,967	\$838,473	\$3,894,916	
This project combines the use of existing pump stations with the construction of a 2,500 foot-long diversion channel, water control structures, and earthen terraces planted with smooth cordgrass (<i>Spartina alterniflora</i>). This will force the flow of freshwater and nutrients through a deteriorated marsh area to abate site-specific marsh loss. This project is currently pending deauthorization.												
PO-26 (XPO-55a)	Opportunistic Use of Bonnet Carre Spillway	FD	9	USACE	Sen. Joel T. Chaisson II Rep. Gary L. Smith	St. Charles	177	I	No Date	NI	\$150,706	
								\$68,427	\$0	\$82,279	\$150,706	
To abate high salinity stress on vegetated wetlands surrounding Lake Pontchartrain, this project incorporates the removal of pins from the Bonnet Carre Spillway structure during high flow periods in the Mississippi River to allow no more than 4,000 cubic yards/second of water to flow from the river into Lake Pontchartrain. This will not be possible every year and the pins will be replaced by April first of each year to reduce the possibility of algal blooms in the lake.												
PO-27 (XPO-95)	Chandeleur Islands Restoration	VP	9	NMFS	Sen. Lynn B. Dean Rep. Kenneth L. Odinet, Sr.	St. Bernard	220	I	2001	I	\$1,435,066	
								\$261,007	\$1,310,036	\$174,263	\$1,745,306	
This project was authorized to accelerate the recovery period of Barrier Island areas overwashed by Hurricane Georges in 1998 through vegetative plantings. The overwash areas which encompass 364 acres, are located at 22 sites along the Chandeleur Sound side of the island chain, and will be planted with smooth cordgrass (<i>Spartina alterniflora</i>). Construction of the project is currently at 40 % completion.												

(continued)

Program	Project Number State/Federal	Project Name	Project Type	PPL	Agency/ Sponsor	Senator/Representative	Parish	Anticipated Acres Benefitted	Activities			Original Baseline Cost (top) and Current Cost Estimate (bottom)
									Engineering, Design, and Landrights	Construction	Operation, Maintenance, and Monitoring	
Breaux Act (continued)	PO-28 (PPO-07a)	LaBranche Terracing/Planting	SNT/ SP/VP	9	NMFS	Sen. Joel T. Chaisson II	St. Charles	489	I	No Date	NI	\$821,752
						Rep. Gary L. Smith			\$989,812	\$0	\$37,378	\$1,027,190
	This area has experienced wetland loss as a result of Mississippi River levee construction, agricultural impoundment failure, transportation infrastructure construction, oil and gas development, and shoreline erosion. This project includes shoreline protection, marsh terraces, vegetation planting and herbivore control components to create emergent marsh and protect interior marsh fringes and the Lake Pontchartrain shoreline from continued erosion.											
	PO-29 (Complex Project)	Diversion into Maurepas Swamp	FD	9	EPA	Sen. Joel T. Chaisson II	St. John the Baptist	N/A	NI	No Date	NI	N/A
						Rep. Robert Faucheux, Jr			N/A	N/A	N/A	N/A
	This project is intended to restore a natural hydrologic regime and increase nutrient inputs in cypress-tupelo swamp tracts south of Lake Maurepas. This will be accomplished through the diversion of Mississippi River water into the region of degraded swamp.											
PO-30	Shore Protection and Marsh Creation in Lake Borgne at Shell Beach	SP/MC	10	EPA	Sen. Lynn B. Dean	St. Bernard	229	I	No Date	NI	\$527,120	
					Rep. Kenneth L. Odinet, Sr.			\$512,537	\$0	\$0	\$527,120	
This project is necessary to maintain the integrity of the narrow strip of marsh that separates Lake Borgne from the Mississippi River Gulf Outlet (MRGO). This land protects the communities of Shell Beach, Yscloskey, and Hopedale from direct exposure to lake wave energies and storm surges. This will be accomplished through construction of a continuous nearshore rock breakwater. This project is currently in the Phase I evaluation process.												
State	PO-01	Violet Siphon	FD	N/A	N/A	Sen. Lynn B. Dean Rep. Kenneth L. Odinet, Sr.	St. Bernard	84	C	1992	I	\$380,584
	The purpose of this project is to return into operation the existing siphon, and to enlarge the size of the diversion so that more sediment and freshwater are available to offset marsh subsidence and saltwater intrusion.											
	PO-02c	Bayou Chevee	SP	N/A	N/A	Sen. Jon D. Johnson Rep. Kenneth L. Odinet, Sr.	Orleans	75	C	1994	C	\$62,000
	This project installed 2,000 feet of brush fences at the mouth of Bayou Chevee.											
	PO-03	LaBranche Shoreline Stabilization and Canal Closure	SP	N/A	N/A	Sen. Joel T. Chaisson II Rep. Gary L. Smith	St. Charles	1,750	C	1987	C	\$1,324,000
The purpose of this project is to restore the integrity of the shoreline which separates Lake Pontchartrain from the western edge of the LaBranche wetlands.												
PO-03b	LaBranche Shoreline	SP	N/A	N/A	Sen. Joel T. Chaisson II Rep. Gary L. Smith	St. Charles	50	C	1996	C	\$1,290,851	
A rock breakwater was constructed along the Lake Pontchartrain shoreline, east of Bayou LaBranche, to protect the hydrologic boundary between the lake and the wetlands from being breached.												
PO-08	Central Wetlands	FD	N/A	N/A	Sen. Lynn B. Dean Rep. Kenneth L. Odinet, Sr.	St. Bernard	300	C	1992	C	\$250,000	
This project is designed to provide freshwater, nutrients, and sediment associated with stormwater runoff to an area of marsh near the PO-01 Violet Siphon.												

(continued)

Program	Project Number State/Federal	Project Name	Project Type	PPL	Agency/ Sponsor	Senator/Representative	Parish	Anticipated Acres Benefitted	Activities			Original Baseline Cost (top) and Current Cost Estimate (bottom)
									Engineering, Design, and Landrights	Construction	Operation, Maintenance, and Monitoring	
State (continued)	PO-10	Turtle Cove	SP	N/A	N/A	Sen. Ron J. Landry Rep. Robert Faucheux, Jr.	St. John the Baptist	184	C	1994, 2001	C	\$351,000
		A 1,640 foot rock-filled gabion breakwater was constructed to maintain and protect the Lake Pontchartrain shoreline that shelters The Prairie (an 800-acre expanse of shallow, open water marsh bordered by organic freshwater marsh) from high wave energies, and to encourage sediment deposition behind the gabion structure. An additional \$195,600 was used for maintenance in 2001.										
PCWRP		Crab Pond	SP	N/A	N/A	Sen. Jon D. Johnson Rep. Kenneth L. Odinet, Sr.	Orleans	1	C	1991, 1994, 1997 1998, 2000, 2001	I	\$91,646
	The Crab Pond, an open-water area adjacent to Chef Menteur Pass, is located within the Bayou Sauvage National Wildlife Refuge. Christmas tree fences were constructed to prevent Chef Menteur Pass from eroding further into Crab Pond. Fences were originally constructed and filled in 1991 and maintenance was performed in 1994, 1997, 1998, 2000, and 2001.											
		Goose Point	SP	N/A	N/A	Sen. Tom Schedler Rep. Diane G. Winston	St. Tammany	3	C	1991, 1992, 1993, 1998, 2000, 2001	I	\$90,935
	The Goose Point project is located along the northern shore of Lake Pontchartrain. The project was constructed to restrict the opening between Lake Pontchartrain and the inner marsh, to protect existing marsh vegetation from erosion, and to encourage the colonization and growth of new marsh vegetation.											
		The Prairie	SP	N/A	N/A	Sen. Joel T. Chaisson II Rep. Robert Faucheux, Jr.	St. John the Baptist	3	C	1991, 1995, 1996, 1997, 1998, 1999, 2000, 2001	I	\$127,387
	Wave action from Lake Pontchartrain was eroding the strip of land adjacent to the Prairie, an 800-acre expanse of shallow, open water bordered by freshwater marsh between Lakes Maurepas and Pontchartrain. The project was constructed to maintain the separation between The Prairie and Lake Pontchartrain, to promote the growth of marsh vegetation, and to prevent the thinning of the lake rim.											
		LaBranche	SP	N/A	N/A	Sen. Joel T. Chaisson II Rep. Gary L. Smith	St. Charles	5	C	1991 - 2000	I	\$175,800
The LaBranche Christmas tree fences were constructed in 1991 in a series of open-water ponds located within the LaBranche wetlands. These pond edges are susceptible to erosion by wind-generated waves. The brush fences were designed to create emergent marsh in the LaBranche wetland area.												
	Blind Lagoon	SP	N/A	N/A	Sen. Jon D. Johnson Rep. Kenneth L. Odinet, Sr.	Orleans	1	C	2000, 2001	I	\$36,000	
Christmas trees were placed in a wind-row manner to trap sediment and provide wildlife habitat in the Bayou Sauvage National Wildlife Refuge.												
	Bayou Bienvenue	SP	N/A	N/A	Sen. Lynn B. Dean Rep. Kenneth L. Odinet, Sr.	St. Bernard	1	C	2001	I	\$18,000	
Approximately 400 feet of brush fence were constructed to the southwest of Bayou Gauche to slow tidal-influenced water exchange, trap sediment, and protect vegetation along Bayou Bienvenue.												

(continued)

Program	Project Number State/Federal	Project Name	Project Type	PPL	Agency/ Sponsor	Senator/Representative	Parish	Anticipated Acres Benefitted	Activities			Original Baseline Cost (top) and Current Cost Estimate (bottom)
									Engineering, Design, and Landrights	Construction	Operation, Maintenance, and Monitoring	
Vegetation		Turtle Cove	VP	N/A	N/A	Sen. Joel T. Chaisson II Rep. Gary L. Smith	St. John the Baptist	6	C	1987, 1996	I	\$3,254
		A total of 480 giant cutgrass (<i>Zizaniopsis miliacea</i>) plants were used over 2,400 linear feet in order to establish vegetation in a reach of eroded shoreline on Lake Pontchartrain. These plants were installed behind a rock breakwater structure.										
		Madisonville Lighthouse	VP	N/A	N/A	Sen. John J. Hainkel Jr. Rep. Diane G. Winston	St. Tammany	10	C	1988	I	\$5,203
		A total of 4,400 smooth cordgrass (<i>Spartina alterniflora</i>) plants were used to decrease erosion from wave action in Lake Pontchartrain near the Madisonville Lighthouse, which is located on a peninsula extending about 600 feet into Lake Pontchartrain. Plants were installed around a small nearby island, and along the sides of the peninsula where there was no rock protection.										
		Goose Point	VP	N/A	N/A	Sen. John T. Schedler Rep. Diane G. Winston	St. Tammany	166	C	1991, 1993, 1994, 1995, 1996, 1997, 1998	I	\$119,158
		A total of 31,200 smooth cordgrass (<i>Spartina alterniflora</i>) plants, 500 seashore paspalum (<i>Paspalum vaginatum</i>) plants, and 500 California bulrush (<i>Schoenoplectus californicus</i>) plants were used in order to create a vegetation buffer against wave action from Lake Pontchartrain, recolonize bare mudflats, and reduce interior marsh erosion along the Lake Pontchartrain.										
		LaBranche	VP	N/A	N/A	Sen. Joel T. Chaisson II Rep. Gary L. Smith	St. Charles	113	C	1991, 1992, 1994, 1996, 1998, 2000	I	\$69,284
	A total of 2,210 smooth cordgrass (<i>Spartina alterniflora</i>) plants, 7,800 California bulrush (<i>Schoenoplectus californicus</i>) plants, and 209 giant cutgrass (<i>Zizaniopsis miliacea</i>) plants were used to trap sediment, reduce wave erosion, and to establish marsh vegetation in the interior of a spoil disposal area.											
	MRGO - North Shore	VP	N/A	N/A	Sen. Lynn B. Dean Rep. Kenneth L. Odinet, Sr.	St. Bernard	17	C	1995	I	\$10,170	
	A total of 1,500 smooth cordgrass (<i>Spartina alterniflora</i>) plants were used along the Mississippi River Gulf Outlet (MRGO) in order to create marsh and to provide shoreline protection along Bayou Dupree.											
	Bayou Bienvenue	VP	N/A	N/A	Sen. Lynn B. Dean Rep. Kenneth L. Odinet, Sr.	St. Bernard	13	C	1996	I	\$7,580	
	A total of 430 black mangrove (<i>Avicennia germinans</i>) trees and 688 smooth cordgrass (<i>Spartina alterniflora</i>) plants were used on Bayou Bienvenue along the levee and along an interior borrow canal in order to decrease shoreline erosion.											
	Hog Island	VP	N/A	N/A	Sen. John T. Schedler Rep. A. G. Crowe	St. Tammany	18	C	1999	I	\$10,848	
	A total of 800 giant cutgrass (<i>Zizaniopsis miliacea</i>) plants and 800 California bulrush (<i>Schoenoplectus californicus</i>) plants were used to provide a vegetation buffer along an eroding shoreline segment.											

(continued)

Program	Project Number State/Federal	Project Name	Project Type	PPL	Agency/ Sponsor	Senator/Representative	Parish	Anticipated Acres Benefitted	Activities			Original Baseline Cost (top) and Current Cost Estimate (bottom)
									Engineering, Design, and Landrights	Construction	Operation, Maintenance, and Monitoring	
Vegetation (continued)		Salvador Pump-in	VP	N/A	N/A	Sen. Joel T. Chaisson II Rep. Gary L. Smith	St. Charles	11	C	1999	I	\$6,780
	A total of 1,000 giant cutgrass (<i>Zizaniopsis miliacea</i>) plants were used along 5,000 linear feet of shoreline in order to protect an area of eroded shoreline, absorb wave energy, and prevent continued erosion.											
		Blind River	VP	N/A	N/A	Sen. Louis J. Lambert, Jr. Rep. John C. Diez	Ascension	14	C	2000	I	\$8,136
	A total of 200 California bulrush (<i>Schoenoplectus californicus</i>) plants and 1,000 containers of giant cutgrass (<i>Zizaniopsis miliacea</i>) plants were used in selected areas to provide a vegetation buffer and reclaim eroded areas along the banks of Blind River.											
		West Pearl River	VP	N/A	N/A	Sen. John T. Schedler Rep. A. G. Crowe	St. Tammany	9	C	2000	I	\$5,424
	A total of 400 giant cutgrass (<i>Zizaniopsis miliacea</i>) plants and 400 California bulrush (<i>Schoenoplectus californicus</i>) plants were used along a barren channel bank to stabilize the eroding bank.											
Vegetation (continued)		Bayou La Branche	VP	N/A	N/A	Sen. Joel T. Chaisson, II Rep. Gary L. Smith	St. Charles	11	C	2001	I	\$7,558
	A total of 1,000 stems of California bulrush (<i>Schoenoplectus californicus</i>) were planted along Bayou La Branche to provide a buffer against shoreline erosion. This particular stretch of the canal bank is currently at risk of breaching, allowing water exchange between the canal and the adjacent marsh.											
		Saveiro Canal	VP	N/A	N/A	Sen. Donald Cazayoux Open Seat	Ascension	9	C	2001	I	\$7,260
	Both giant cutgrass (<i>Zizaniopsis milacea</i>) and California bulrush (<i>Schoenoplectus californicus</i>) were planted along Saveiro Canal, east of Sorrento, to create a buffer against shoreline erosion.											
		Lake Maurepas	VP	N/A	N/A	Sen. Louis J. Lambert, Jr. Open Seat	Livingston	9	C	2001	I	\$7,524
	A total of 800 giant cutgrass (<i>Zizaniopsis miliacea</i>) plants were used in an attempt to close-off an abandoned oil field canal located three miles north of the Blind River - Lake Maurepas junction.											
Section 204/1135		MRGO, Berm, Mile -2 to -3	DM	N/A	N/A	Sen. Lynn B. Dean Rep. Kenneth L. Odinet, Sr.	Plaquemines	N/A	C	1999	N/A	\$150,000
	This Section 204 project utilized material from maintenance dredging activities along the Mississippi River Gulf Outlet (MRGO) to nourish the littoral system that feeds Breton Island. This project was completed in August 1999.											
Section 204/1135 (Continued)		MRGO, Breton Island Restoration., Mile 2.3 to 4.0	DM	N/A	N/A	Senator Lynn B. Dean Rep. Kenneth L. Odinet, Sr.	Plaquemines	26	C	1999	N/A	\$1,050,000
	This Section 204 project utilized material from maintenance dredging activities along the Mississippi River Gulf Outlet (MRGO) to repair Breton Island. This project was completed in November 1999.											

(continued)

Program	Project Number State/Federal	Project Name	Project Type	PPL	Agency/ Sponsor	Senator/Representative	Parish	Anticipated Acres Benefitted	Activities			Original Baseline Cost (top) and Current Cost Estimate (bottom)
									Engineering, Design, and Landrights	Construction	Operation, Maintenance, and Monitoring	
		MRGO (1999), Mile 14 to 11	DM	N/A	N/A	Sen. Lynn B. Dean Rep. Kenneth L. Odinet, Sr.	St. Bernard	50	C	1999	N/A	\$350,000
This Section 204 project provided for the unconfined placement of 3,468,901 cubic yards of material into shallow water adjacent to the south jetty at about mile 15.3. The material was dredged from miles 14.0 to 11.0 of the Mississippi River Gulf Outlet (MRGO) navigation channel and placed to an elevation conducive to marsh establishment.												
Mitigation	HPL-MIT	Lake Pontchartrain Mitigation Project	SP	N/A	N/A	Sen. Joel T. Chaisson II Rep. Robert Faucheux, Jr.	St. John the Baptist	600	C	1996	N/A	\$2,225,000
	This project consisted of a near-shore, segmented breakwater system in Lake Pontchartrain parallel to a five-mile reach of the Manchac Wildlife Management Area. The project specifically mitigated for damages resulting from construction of the Lake Pontchartrain Hurricane Protection Project.											
Mitigation	PO-4355NP4	Fontainebleau State Park Mitigation	SP/ DM	N/A	N/A	Sen. John T. Schedler Rep. Diane G. Winston	St. Tammany	6	C	1999	N/A	\$225,000
	This project repaired a section of breached shoreline by depositing approximately 9,000 cubic yards of sand for a feeder berm on the easternmost end of Fontainebleau State Park.											
Other	DSR-81768	LaBranche Wetlands (X-mas Trees) (FEMA)	SP	N/A	N/A	Sen. Joel T. Chaisson II Rep. Gary L. Smith	St. Charles	N/A	C	2000	N/A	\$42,800
A 700-foot section of a Christmas tree brush fence was repaired. This project was damaged by Hurricane Georges, Hurricane Earl, and Tropical Storm Francis in 1998.												

Program: Breaux Act=Coastal Wetlands Planning Protection and Restoration Act (CWPPRA); State=Restoration projects funded entirely by the State of Louisiana through the Coastal Restoration Division; PCWRP=Parish Coastal Wetlands Restoration Program; Vegetation=DNR/NRCS/SWCC Vegetation Planting Program; Section 204/1135=Water Resource Development Act Sections 204 and 1135 beneficial use of dredged material projects; WRDA=Water Resources Development Act; Mitigation=mitigation projects implemented by the Coastal Restoration Division.

Project Type: HR=Hydrologic Restoration; DM=Beneficial Use of Dredged Material; MM=Marsh Management; MC=Marsh Creation; SP=Shoreline Protection; FD=Freshwater Diversion; VP=Vegetation Planting; SNT=Sediment and Nutrient Trapping.

PPL: Priority Project List (as authorized by the Breaux Act Task Force).

Agency/Sponsor: NRCS=Natural Resources Conservation Service; USFWS=U.S. Fish and Wildlife Service; USACE=U.S. Army Corps of Engineers; EPA=Environmental Protection Agency; NMFS=National Marine Fisheries Service.

Anticipated Acres Benefitted: N/A for Breaux Act demonstration and deauthorized projects.

Activities: C=Completed; I=Initiated; NI=Not Initiated; N/A=Not Applicable; a date in the construction column indicates construction completion date or anticipated date (*).

Original Baseline Costs and Current Cost Estimates for Breaux Act projects are from the USACE. Costs for other restoration programs are from DNR's Contract and Budget Section. Original Baseline Cost and Current Cost Estimate both include contingency funds. Breaux Act PPL 10 project costs are for Phase I only. Vegetation program project costs are estimated based on plant size and quantity.